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ABSTRACT

A study examined the concept of the universality or the cultural specificity of the ideal story structure using the J. M. Mandler and N. S. Johnson story grammar. Specifically, the study tested the effect of two different story structures, one a conventional fairy tale and the other a Cree Indian narrative, on the recall of Cree Indian children. Sixteen sixth grade children individually read and recalled rewritten versions of two stories. The two stories had been analyzed in terms of the Mandler and Johnson grammar and had been found to have many points of difference in story structure. The conventional fairy tale closely matched the ideal structure of the Mandler and Johnson grammar, while the Cree narrative differed somewhat from the ideal. The results showed that the fairy tale was recalled more easily by the Cree children than the Cree narrative. This finding should not be interpreted to support the universality of story structure concept or to mean that Cree Indians have become completely acculturated and have lost their traditional schema. (FL)

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THE RELATIONSHIP BETWEEN STORY GRAMMAR AND HOW GRADE SIX CREE STUDENTS RECALL STORIES

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INTRODUCTION AND THEORETICAL ASPECTS

In recent years the development of story grammar marks an attempt to codify and explain the processes of story comprehension and recall in terms of a reciprocal exchange between the structure of the story on the page and a story schema in the mind of the reader/listener (Johnson and Mandler, 1980; Mandler and Johnson, 1977; Rummelhart, 1975; Stein, 1978; Thorndyke, 1977). The notion of story grammar, therefore, brings together two distinct lines of investigation: linguistic and anthropological analyses of the structure and content of folktales (e.g., Colby, 1973; Levi-Strauss, 1955; Propp, 1958) and attempts to elaborate the notion of mental schemas (e.g., Nelson, 1977; Pace, 1978; Schark and Abelson, 1977).

Ever since the pioneering work of Bartlett (1932) we have been aware that people possess some preexisting knowledge of stories which influences story recall. Individuals, including very young children (Clark and Clark, 1977; Kintsch, 1976), seem to have an intuitive grasp of a story structure. The main protagonist is introduced, acquires a goal, attempts to achieve it; this attempt must have a result, either positive or negative. However, along the way of telling and retelling many parts are omitted and do not interfere with comprehension so long as the main thrust is preserved. This knowledge or schema acts as a set of expectations, about possible types and sequences of story information, which aid in story comprehension and memory for stories.

In particular, Mandler and Johnson (1977) observed that people seem to possess a special facility for understanding and remembering folktales. Elsewhere, these authors have argued that the structure of these tales "must be one which has been influenced by what people can remember" (Johnson and Mandler, 1980) because these stories survived the numerous retellings from generation to generation. Other authors also point to a link between the structure of folktales and the psychological processes involved in comprehension and memory (e.g., Kintsch, 1976; Stein, 1978). This point of view is explicitly stated by Mandler (1979):

> Nancy Johnson and I have suggested that as far as the form of folktales is concerned, the structural laws that Jacobson sought probably represent, at least in part, structural limitations on human memory. That is we believe that stories from the oral tradition have the particular form they do because it makes them easy to understand and to remember. This is no small matter in a non-literate world in which stories are not written down but passed on only by word of mouth.

Although the ability to read and write is now far more widespread than it was in the heyday of the folktale, people still tell stories and when they do new content is put in the old structures. It is assumed that this "ideal" structure is internalized as story schema by hearing many stories since childhood and by abstracting from experienced social relations (Mandler and Johnson, 1977; Stein 1978). This ideal story structure was codified as a story grammar in the form of deep structure rules (Mandler and Johnson, 1977). A grammar highlights the reciprocal exchange between a person's schema or expectations and the incoming story information. In other words,

"The development of story grammars illustrates an attempt to describe the general structural characteristics of stories" (Stein, 1978; p.7) in terms of an internalized representation, by codifying some commonalities about the generic structure of stories as a set of rewrite rules capable of generating stories in the "canonical story form" (Mandler and Johnson, 1977).

A story grammar plays both a descriptive and a predictive role; stories which closely approximate the "ideal" story structure will be well recalled. Therefore, the closer the match between the incoming story and the ideal story schema in the mind of the listener/reader the more exact and well-sequenced the recall. At present, there is compelling evidence to show that a story grammar is capable of predicting the extent and accuracy of recall by analysing the structure of the stimulus story (Mandler and Johnson, 1977; Mandler and De Forrest, 1979) and comparing it with the recall protocol. One summary prediction could encompass all the individual predictions of the story grammar: the more the text structure of the story approximates the ideal underlying structure the more extensive and accurate will be the recall.

However, a problem arises when stories from other cultures are considered. Story grammars were derived by analysing many stories from the oral tradition, but those were mainly of the Euro-American fairytale variety. And since many Amerindian tales do not conform comfortably to this structure, it can be assumed that they conform to other structural rules which are internalized as schema by members of

those communities. Furthermore, these communities have different world views and offer varying sets of social relations to their members (Preston, 1975). It follows from both of these points that these people probably acquire a story schema different from the "ideal". The question that then arises is: Do people with a particular Amerindian background knowledge and experience recall more fully stories that closely approximate the conventional story structure or stories that have originated from their culture?

RELATED RESEARCH

Ideal Story Structure

Before the advent of story grammar, there were no tools for measuring the cohesiveness of the structure of the stimulus story and neither was there an accurate system for making comparisons between it and the structure of recalls. For example, the classical work in the area of children's recall of stories carried out by Piaget (1926) went unchallenged until the present (Mandler and Johnson, 1977, p.141), even though there are big variations in the structure of the input stories. Therefore, Piaget's conclusions are suspect. In consequence, a major thesis of the research using story grammar is that the extent and organization of the recall is dependent on the structure of the input.

The results of many studies show that stories with an ideal structure are well recalled by children in first grade through adulthood (Mandler and Johnson, 1977; Mandler, 1978; Mandler and DeForrest,

1979; Stein and Glenn, 1977; Stein and Nezworski, 1978a). Moreover, and of special significance to the present study, it appears that by grade six children have a well-established conventional story schema and are learning to cope with certain deviations from the ideal story structure (Mandler, 1978; Mandler and DeForrest, 1979; Stein and Nezworski, 1978a; Stein and Nezworski, 1978b).

Structural Changes in Recall

Research has shown that recall is influenced by the specific structure of the input material. Deviations occur at places where the original story violates the ideal structure. In recall people of all ages try to make the story material approximate their schemas. Inversions in recall occur when the surface rendering of the story does not follow the sequence of events in the ideal underlying structure (Mandler, 1978; Mandler and DeForrest, 1979; Stein and Nezworski, 1978a).

Additions of new material into recall introduces story categories either missing from the surface rendering of the story or whose content is not retrievable. In either case, it supplies the structural requirements of that story category (Mandler and Johnson, 1977; Stein and Glenn, 1977). Furthermore, distortions in recall occur where there is ambiguity or violation of the ideal structure in the surface structure of the stimulus story (Mandler, 1978).

Therefore, there appears to be unequivocal research evidence to show that stories with an ideal structure are well recalled by all ages and that inversions, additions and distortions generally occur

in recall as a result of violations in the surface structure of the ideal story. These findings lead to questions about the universality of the ideal structure.

Cultural Differences in Story Schema

Mandler and Johnson (1977), and Johnson and Mandler (1980) make strong claims about the universality of the ideal story structure. These authors have analysed stories from the oral traditions of many cultures and discovered similar structures. Their analysis suggests that this particular structure is due in part to certain limitations on human memory. In addition, Mandler et al. (1978) carried out a study whose findings support this case. Vai subjects in Liberia were presented with some stories which were identical to those used in the Mandler and Johnson (1977) study except that some concepts were changed to make them locally meaningful. The overall quantity and patterns of recall were highly similar to those of the corresponding groups of Americans. These results strongly support the claim that the structure of folktales is a cultural universal.

On the other hand, Mandler and Johnson (1977) analysed Barlett's (1932) "War of the Ghosts", a Kwakiutl Indian story, into the canonical structure as defined by their grammar, and found that the major distortions or failures in recall occurred where the surface representation of the story seriously violated the expected structure. Similarly, Kintsch (1976) and Kintsch and Greene (1978) present evidence to demonstrate that the rules for characterizing the structure of Euro-American folktales do not apply to American Indian tales.

Thus, the results of research findings relating to the universality of story structure is not clear. In consequence this study attempts to provide some empirical evidence concerning the universality of conventional story structure as an aid in story comprehension and recall, or some insights into the counterbalancing effect provided by reading a story from one's own culture.

PURPOSE OF THE STUDY

This study was designed to test the effect of two different story structures, one a conventional fairytale and the other a Cree Indian narrative, on the quantity and quality of recall given by Grade six Cree children. On a more general level, the purpose is to test the validity of either of two opposing theses: (1) that exposure to the cultural background in which the story originated determines recall, (2) that conformity of the story structure to the underlying structure of the Mandler and Johnson grammar determines recall.

Which story will Cree students recall more exactly and fully? And, how will the differences in story structure affect their recall? In addition, these findings should provide some further information to help resolve the issues surrounding the universality or cultural specificity of the ideal story structure or schema.

Null Hypotheses

The present study was specifically designed to test the following null hypotheses:

1. There will be no significant difference between stories for the proportion of story propositions accurately recalled.
2. There will be no significant difference between stories for the proportion of recall of:
    (a) episodes connected by explicitly stated causals,
    (b) temporally connected episodes,
    (c) episodes connected by explicit and implicit causals (i.e. total causals) for story 1 and explicit causals for story 2.
3. There will be no significant difference between stories for the amount of inversions between story propositions proportionate to accurate recall.
4. There will be no significant difference between stories for the number of added story propositions proportionate to accurate recall.
5. There will be no significant difference between stories for the amount of: (a) structural distortion, (b) semantic distortions of story propositions proportionate to accurate recall.

DESIGN

Subjects were asked to recall verbally the two stories which they read. One-way analyses of variance with repeated measures and correlated t-tests were used in the statistical analysis of the data. The level of significance was set at $p < .01$ and $p < .05$.

Subjects

Sixteen subjects in grade six attending school in a small town in Alberta were chosen as a sample. The selection of the sample was made by the teachers of the five sixth grade classes on the following criteria:

1. They were proficient readers (that is, they scored at or above fifth grade on the Canadian Test of Basic Skills).
2. They had Cree or Metis backgrounds. They were brought up in a native community and their parents, at least, spoke Cree. In fact all subjects except one spoke Cree.
3. They were willing to cooperate. Since it was considered that some children might be shy or intimidated, only those who openly volunteered were selected.

The investigator attended a staff meeting at the school and explained the project to the entire teaching staff who reacted favourably and as a group discussed the most opportune way to select the sample. There were approximately twenty students who met the requirements among the five grade six classes in the school. Each class had a representative mix of native and non-native children. It was decided that the native children should not feel singled out in any way and therefore, that the following procedure should be followed:

a) Each teacher would explain the project and the specific task involved to the entire class and ask for volunteers.
b) Three volunteers meeting the requirements would then by chosen by the teacher.

This procedure was adhered to except that four students from one class took part as the extra student came to the experimenter in the school yard and specifically asked to participate.

Instruments

The two stories that were selected for this study were analysed in terms of the Mandler and Johnson (1977) story grammar.* Many points of difference in the structure of the two stories emerged; the expression of one closely matches the ideal underlying structure, whereas the other differs from the ideal story structure on many points.

The first story is the popular European fairytale "The Elves and the Shoemaker" from Grimm's Tales. The tale as found in the Arbuthnot Anthology of Children's Literature is literary in style; many of the surface expressions of the story had been deleted, and as well it had inversions of events. The story was rewritten so that its fit with the structures of the Mandler and Johnson grammar was almost perfect. The second story was taken from Cree Narrative: Expressing the Personal Meaning of Events by R.J. Preston (1975). It is a tale which demonstrates the Cree attitude towards hardship and is held together on the "principle of fours": there must be four actors, four holes, four sets of instructions, etc. This is a common feature of North American Indian tales. The story was narrated by George Head, a Cree elder, to Preston during an extensive fieldwork in the sixties

* The later extensions to the grammar (Johnson and Mandler, 1980) were also utilized in the analysis.

among the woods Cree in Northern Quebec. The story is untitled, but for the present purposes it was called: "The Stranger and The Man Who Had No Luck." Preston who had a knowledge of Cree translated it as faithfully as possible with the help of a native speaker.

It is generally agreed among anthropologists that it is possible to study both the structure and content of stories in translated form (Colby, 1973). As far as can be ascertained the subject matter of stories collected some time ago among the Alberta Cree are similar to those of the Eastern Cree and, in part, the traditions of both groups are quite similar.

The stories differ in length: the Elves story has fifty-eight story propositions whereas The Stranger story has sixty-eight, but investigations have shown that length is not a crucial variable in recall as the same proportion of both long and short stories with similar structures are recalled (Mandler and Johnson, 1977). However, to further counterbalance the effect of length on recall the fairy-tale has 157 semantic propositions and the Cree tale has 154 (Fagan, 1978).

The two tales were typed as two separate booklets for presentation to the students.

Differences in Story Structure and How They are Marked. Parsing the stories revealed many points of difference between their structures. "The Elves and the Shoemaker" fits neatly into the structure represented by the Mandler and Johnson grammar. It consists of a setting followed by nine episodes which are divided into three superordinate episodes (See Figure 1). This gives three groups of episodes. The first group tells how the shoemaker is poor, gets help and becomes prosperous, the

second tells how he and his wife discover that the help comes from the elves and the final grouping relates how the couple show their gratitude; the elves leave forever and the shoemaker is happy ever-after.

On the other hand, the Cree story does not conform as faithfully to the structure of the Mandler and Johnson grammar. It was analysed as a setting and one superordinate episode whose development represents all the man's attempts to survive and the outcome of those attempts to attain the goal of survival. The rewrite rules of the grammar do not allow embedding of attempts but in the interest of achieving a logical analysis for this story a supplementary rewrite rule was created:

ATTEMPT ⟶ EPISODE

The present representation of the story which is given in Figure 2 is only one of several slightly different representations. (See Mandler and Johnson, 1977, p.138). The obvious violations of the rules are marked on the tree diagram (see Figure 2) with the following convention: square brackets surround all deviations from the ideal in the surface expressions of the story, e.g. [T] is a temporal connection where the Mandler and Johnson grammar predicts a causal connection. The following superscripts mark certain specific deviations:

R signals repetition of propositions.

S means that there is inversion of sequence in the sentences of the surface structure.

IS marks an internal setting, i.e. a setting that is interspersed amidst the episode structure.

AE marks an aborted episode, i.e. an episode which seems to begin but never progresses and is probably added for emphasis, e.g., the woman says to her husband "Don't go too far" but it is not an integral part of any specific episode in the story.

IC is implied cause, i.e. cause that is not expressed in the surface expression but because of the juxtaposition of events in the story the reader could imply causality, e.g., in Figure 2 between episodes 4 and 5.

Broken lines between embedded episodes mean that episodes are not causally connected in the surface structure of the story.

Ø marks deletions of story categories in the surface structure.

A quick glance at Figures 1 and 2 will demonstrate that the structures of the stories differ on several points.

Data Collection

At the time of data collection the researcher discussed the purpose of the study with each individual. In addition, each subject was again asked if he/she wished to participate. No student read and recalled both stories on the same day; the order of presentation of each story was randomly alternated.

Subjects were taken one at a time into a small room off the school library. The following instructions were given to each subject: "I am interested in how children remember stories. I want you to read this story. Make sure that you have understood it well. Later you

will be asked to tell it again as exactly as you can."

Following a five minute break in which the subjects were engaged in an interpolated task, these instructions were given: "Now would you tell me the story that you read. Try to remember as much of it as possible." When it appeared that the subject was finished with the recall he/she was asked if there was anything else. The recalls were recorded and later transcribed for analysis.

Analysis of the Data

Mazes (Loban, 1976) were discarded and the protocols were analysed into t-units and incomplete t-units which were equivalent to story propositions. Following this, the protocols were analysed and scored on two different levels in order to measure the semantic similarity between the story propositions of the original and the story propositions of the recalls, and the structural or semantic changes made in recall.

Semantic Similarity. Each protocol was scored for the extent and accuracy of recall of the story propositions from the original stories. First the story propositions (t-units and incomplete t-units) were divided into semantic propositions. These semantic propositions were then compared to the semantic propositions in the original story in terms of gist recall (for a complete account of matching criterion see Cronin, 1980, pp. 55-56). A story proposition was judged completely recalled if it contained all the semantic propositions of the original story proposition; otherwise it was scored as

partially recalled. Each complete story proposition accurately recalled was scored as one and each partially recalled story proposition was scored as a half point.

At this stage of the analysis the structural characteristics of the protocols were not considered. Each semantic proposition recalled was scored regardless of preceding or succeeding context.

Structural and Semantic Changes. Following the above analysis, the story propositions in the protocols were parsed into story categories (Mandler and Johnson, 1977) in accordance with the general structural characteristics of the complete recall. It was then possible to compare the structure of the recalled story to the structure of the stimulus story. The protocols were scored for the number of story propositions recalled in termporally and causally connected episodes and in episodes where the causal connection is implied but not stated. Finally, the number of inverted, added and distorted propositions per recall was calculated (see Cronin, 1980, pp. 56-59, for a full account of these analyses).

Reliability

In order to assure the reliability of the above analysis by the researcher, an independent judge, a university professor with many years' experience in this area of research, also analysed the recalls of four subjects. There was perfect agreement between the researcher and the independent judge.

FINDINGS AND DISCUSSION

The results of this study were generally in agreement with the predictions of the Mandler and Johnson story grammar. On the basis of the structural analysis, the grammar predicted that the fairytale would be more fully and accurately recalled than the Cree story. Yet it was hypothesized that since the subjects were Cree, and the Cree story, according to Preston (1975), synthesized "the psychological structure and content" of the traditional Cree world view, this story would be more completely recalled. This counter-balancing effect, however, did not manifest itself.

Influence of Story Structure on Recall

The first two hypotheses tested in this study confirmed the predictions of the story grammar: the more the text structure of the story approximates the ideal underlying structure the more extensive and accourate will be the recall.

Hypothesis I. The first hypothesis which indicated no difference between the stories in terms of the overall accuracy and extent of recall of semantic content was rejected, indicating that the story with the conventional story structure, was recalled significantly more accurately and fully than the Indian story. Table I shows a significant difference in the proportion of semantic propositions recalled.

[*Insert Table I about here*]

Mandler and Johnson (1977) emphasize two features of a story structure which will specifically affect the extent and accuracy of recall: (1) expression of story categories in the surface structure, (2) sequencing of the text compared to the underlying story structure. Analysis of the stories in terms of the first aspect reveals that although each story has eleven story categories deleted, all of these are reactions which are an optional story category. Therefore, these deletions should not have caused any problems in recall. However, Mandler and Johnson (1977) state:

> If the underlying reaction or goal is ambiguous or counter to our expectations about the world, its omission would lead to a violation. It is this kind of an omission which makes a well-formed story from one culture appear ill-formed to another. A goal path may be clearly motivated for one audience whether the goal is stated or not because it fits a cultural stereotype; that same goal path may be utterly mysterious to another group without specific statements of the underlying goal (p. 130).

The recall score seems to indicate that the subjects may have experienced problems in inferring the underlying goal, due perhaps to lack of exposure to the traditional Cree social relations.

The second aspect of structure mentioned above is sequence of the text. The text of the Elves story follows the exact sequence of the underlying structure of the story grammar. In contrast, there are four cases of violation in the Cree story (see story propositions marked S on Figure 2). These sequence violations caused ambiguity and probably resulted in difficulties in comprehension and retrieval.

The findings of the four other hypotheses deal specifically with the aspects of story structure which are predicted to cause differences in recall: connections between episodes, inversions and omissions which can cause additions and distortions.

Hypothesis II. The outcome of the second hypothesis, which was rejected, also supported the predictions of the grammar. Table III gives the means of the proportion of story propositions recalled in episodes with different types of connections.

[*Insert Tables II, III & IV about here*]

Results of the analysis of variance (see Table II) indicated significant differences across stories. A Newman-Keuls analysis revealed a significant difference between stories in the proportion of story propositions recalled in temporally connected episodes and between total causal connectives (i.e., explicit causally connected episodes for the fairytale and a combination of explicit and implicit causals for the Cree story). However, the difference between the two stories

for proportions of explicitly causally connected episodes was not significant, nevertheless the mean recall of this type of episode was higher for the fairytale (Tables III and IV).

These findings strongly support the predictions of the grammar because even when the episodes of each story were matched against each other according to the type of inter-episodic connectives used, the over-riding influence of the "ideal" structure was still evident. Yet, a more detailed examination of the exact nature of the compared episodes may help us to understand these results more clearly. As there were no implied causal connectives in the fairytale, the superiority of recall of total causals for the fairytale might be expected; the subjects were probably unaware of the underlying story goal around which the implied causals revolve in the Cree story. The significant difference between stories for temporally connected episodes produced an interesting finding. Only the first episode of the Cree story is temporally connected, in comparison to three such episodes in the fairytale thus entailing more information to be remembered; but the structure of that one episode in the Cree story is in violation of the grammar rules as it has both embedded attempt and outcome.

Hypothesis III. This hypothesis was not rejected. The difference between the two stories, as determined by a t-test, for the proportion of inversions in the recalls was not significant.

[*Insert Table V about here*]

On the surface these findings do not conform to the predictions of the grammar as there are four inversions of sequence in the Cree story and none in the fairytale. Therefore, a significant difference in the number of inversions produced in recall could have been expected. "In general, inversions in the recall are a function of violations in the sequencing of propositions in the surface structure of the story". (Mandler and Johnson, 1977, p. 133). The means, however, reflect this difference; the mean proportion of inversions produced in the recall of the fairytale is slightly lower than for the Indian story (Table V).

Hypothesis IV. As for the previous hypothesis, this hypothesis was not rejected. The mean proportion of additions included in the recalls of the two stories, as determined by a t-test, was not significantly different.

[*Insert Table VI about here*]

These findings do not confirm the predictions of the grammar which states that additions of new material into recall will supply story categories either missing from the surface rendering of the story or whose content is not retrievable from memory. As shown earlier, story two (Indian story) contains more deletions and more structural violations which should interfere with the comprehension and retrieval of the original story content. Yet, the mean proportion of additions produced in recall is higher for the Cree story than for the fairytale. However, the relatively high proportion of additions produced in the recalls of the canonical fairytale as

compared to the Cree story which violated the ideal structure can possibly be explained by three facts: (1) more of the fairytale was recalled and hence more additions were produced (Mandler, 1978); (2) the content was more familiar being a school type story and its household setting was also intimately known (in contrast to the stark, winter landscape of the Cree tale), resulting in more inferences being filled in; (3) it now seems that the subjects were more acculturated than was assumed at first, probably partly resulting from exposure to the dominant culture in school and in the home (most families owned televisions). But some additions also occurred in the fairytale because some subjects gave the reason for the shoemaker's good fortune (the elves make the shoes) near the beginning of their recall as well as describing these events more fully later. Stein (1978) refers to this as a mechanism utilized by children to relieve tension.

An interesting aspect, however, is that both stories generated additions in the settings. Although both stories involved the main character's wife in later episodes, the wives did not appear in the original settings of either story. However, many subjects introduced the wife in the setting.

Hypothesis V. This hypothesis was not rejected. The proportion of structural and semantic distortions of story propositions in the recall of each subject was not significant across stories, as shown by an analysis of variance (Table VII).

[*Insert Tables VII & VIII about here*]

These findings lend only partial weight to the predictions of the grammar; although there was not a significant difference in the proportion of either type of distortion produced in the recalls, the mean of both types was higher for the Cree story and of these the proportion of structural distortion was the highest (Table VIII). The grammar predicts that "distortions in recall will occur at points where ambiguity or violation of an ideal structure occurs in the surface structure" (Mandler and Johnson, 1977, p. 134).

A point of interest though external to the scope of the present study is that many of the structural distortions produced in the recall of the Cree story caused major structural distortions, that is, they changed the episodic structure; whereas the structural distortions in the Elves story were more often of a minor nature, changing only the story category of recalled information, e.g., goals were often recalled as attempts.

Conclusion. Whereas the results of hypotheses three, four and five gave only partial support to the predictions of the grammer, the results of the first two hypotheses lent unequivocal support. The first two tested recall of the whole story and large units, that is, episodes, and found the recall for the fairytale to be fuller and more exact. Hypotheses three, four and five attempted to address themselves to specific aspects of story structure in an attempt to locate the cause of the recall problem. It appears that many of the structural violations in the Cree story caused omissions, rather than additions, inversions or distortions, which simply resulted in a lower recall score.

From the evidence presented it appears that the Elves story with the conventional structure is recalled significantly better than the Cree narrative which deviates from the ideal structure. This, Mandler and Johnson would probably argue, stems from the fact that the fairytale conforms to certain structural laws which mirror the cognitive processes involved in comprehending and storing the sequence of simple stories. It appears that the evolution of the canonical story structure from the oral tradition is a type of natural selection of the most essential units of a story that are fittest to convey a story line, and therefore most likely to be remembered. This conclusion points to a dilemma because the Cree story which does not fit comfortably into the mold of an ideally structured story is taken from a contemporary oral tradition.

Influence of Certain Aspects of Cultural Knowledge on Recall

Cultural influence in the recall of stories can be attributed to two sources of cultural knowledge: (1) knowledge of story structure internalized as a schema or set of expectations, (2) knowledge of typical goals, motivations, attitudes and human relations within the culture. From the discussions above it seems likely that the Cree subjects were not familiar with the structure of this particular Cree narrative.

In addition to assuming that the Cree children were familiar with the ideal story structure, it may be assumed that because the recalls of the fairytale were significantly more detailed and exact, that the children were also familiar with the underlying motivations

that prompted the shoemaker's actions in this story. This familiarity with the mainstream values came, at least in part, from six years attendance in a large elementary school.

Although only optional story categories were missing from the text of the Cree story, even so, it appears that the subjects may have had problems inferring the protagonist's motivations; this caused ambiguity which affected storage and retrieval, thus resulting in a lower recall than for the conventional story. This possible lack of familiarity with the traditional Cree world view may also have contributed to the difficulty the subjects displayed in filling in implied causation. Baldness in presentation and ambiguity are a characteristic trait of Indian narratives (Egoff, 1975), hence the ability to fill in gaps is an important feature of their comprehension. Preston (1975) has noted:

> There is a varying but frequent omission of detail or explanation that is expected to be understood. Unity is achieved here by the assumption of shared understandings and by reciprocal participation of the listener (p. 281).

Moreoever, many of the additions were action sequences, which tended towards the action-orientated world view of the dominant culture, and away from the attitude of non-intervention displayed in the Cree story.

Therefore, is it safe to assume that the Cree children in thjs study do not possess any measure of the twofold traditional cultural knowledge necessary to fully comprehend Cree narratives? In the next section, attempts will be made to answer this and more general questions concerning the universality of the conventional story structure.

GENERAL CONSIDERATIONS AND IMPLICATIONS

The results of this study do not allow us to come to simple conclusions; for example, that the conventional story structure is indeed universal or that the Cree students are completely acculturated and have lost their native Weltanschauung. More specific questions concerning narrative comprehension need to be raised, for example:

1. At what stage of acculturation is knowledge of the traditional Cree story schema lost? Research similar to the present study could be carried out with various groups of Cree people, e.g., traditional Cree, acculturated Cree schooled in Cree and acculturated Cree schooled through English to answer this question. It may be discovered, as indeed Ablon (1965) has demonstrated, that it is too simplistic to spell doom to traditional cultures as even in highly urbanized settings many aspects of native American cultures are highly resistant to change; and in addition, that this cultural knowledge is latent and not accessible for school-like tasks simply because the two types of knowledge are not connected in the mind of the child. On the other hand Preston (1975) believes that Cree narrative and the old Cree ways are inextricably intertwined:

> Cree narration expresses features of inherent structures in Cree culture; the patterned world of meanings which each Cree individual abstracts for himself from his interactions with other persons and with the other components of his environment (p. 13).

Therefore, full participation in traditional culture might be found necessary to gain a complete understanding of Cree narrative.

2. Is the episode the primary unit in the comprehension of all stories? And is it psychologically real for all peoples? For example, Colby (1973) found the eidon the most useful unit with which to analyse the Eskimo narrative. (An eidon is a unit which conveys a certain image such as abduction or power struggle and an eidochronic analysis specifies how a tale is held together in terms of the images it conveys.)

In story grammars the primary unit of analysis is the episode and furthermore it is claimed that it possesses psychological reality both for the narrator and for the audience. Perhaps as a consequence of the number of violations which this type of analysis generated for the Cree story, that episode is not one of its inherent structural characteristics. Episodes are structured around an intentional action sequence whereas some Cree narratives are a vehicle for the expression of attitudes and mental events.

> The crucial importance of mental events is a major aspect of the narrative's significance to the Cree listener, as well as to us, although these events are not perceived by the Cree listener as they are by the non-Cree analyst (Preston, 1975, p. 187).

Therefore, the interrelationship between the attitudes expressed in the narrative could be a primary focus of analysis and not the temporal sequence of actions. For example, the most important psychological units in the present narrative could possibly be the man's attitudes towards hardship, i.e., the progression of his mental states. Perhaps this particular style of Indian narrative is more than the relating of a simple action sequence but is more ritualistic and its concern is with creating a certain state in the mind of the listener.

3. Within any one culture is there a range of narrative styles and structures? Perhaps the ideal story structure closely resembles the structure of natural action discourse, but fails to account for the variation in the more literary or ritualistic style stories?

Even though the findings of the present study seem to supply evidence for the universality of the conventional story structure, this issue is not satisfactorily resolved as the Cree story comes from a contemporary oral tradition and it is claimed that the "idealness" of the conventional structure results from its oral origins. Perhaps this dilemma is partly created by an overly inclusive use of the concept of "story"?

The Cree refer to both the narrating of a story such as "The Stranger and the Man Who Had No Luck" and relating an account of an incident from the local news as telling a story (Preston, 1975). Hence, it is quite possible that a distinct style and structure has evolved for each, the former being more ritualistic and poetic and the latter tending toward a simple action narrative (as represented by a story grammar). Within any culture there may be a possible range of story styles from a simple action narrative to amore expressive poetic style which violates the underlying story structure in order to arouse certain attitudes and sentiments in the audience. In simple action narratives all sentences are central to the story but "In many literary examples, however, there are sentences which are, strictly speaking, action superfluous" (Van Dijk, 1975, p. 284). From the parsing of the Cree story it is apparent that many story categories are highly elaborated; further this type of narrative plays

a central role in Cree social ritual (Preston, 1975).

On the other hand, the structure of the ideal story is unequivocally based on the episode which follows a very pragmatic sequence of action such that it is difficult to think of it as being other than universal as all people engage in an exchange of personal experience and constantly recall the day's events. In fact, Britton (1970) says that this constant exchange of gossip affords people an opportunity to spectate on their own lives. Labov and Waletsky (quoted in Van Dijk, 1975) show that these everyday narratives of personal experience are based on rather fixed categories and rules, which closely approximate those found in conventional folktales. Therefore, in consequence it appears that the schemas used for the generation and comprehension of natural narrative and conventional stories are similar: both are based on straightforward action sequences.

Although both "The Shoemaker and the Elves" and "The Man Who Had No Luck" may be considered as stories, they may not represent the same genre or style of story within their respective cultures and so, as a consequence, a comparison between equivalent units is not being made. Following from the discussion above, it seems reasonable to suggest that these two stories could be placed at different points on Britton's (1970) language continuum:

/Transactional/ ⟵ /Expressive/ ⟶ /Poetic/

Transactional style is explicit and articulates the activities of daily living; an expressive style is personal and implicit and there are many shared experiences between the writer and a limited audience,

whereas a poetic creation interrupts the activities of everyday and presents "an object to be contemplated in and for itself" (p. 177). Even though both stories, the fairytale and the Cree narrative, can definitely be placed at the poetic end of the continuum, they will not occupy exactly the same place at that end. Because of the implicit nature of the Cree narrative it can be placed closer to the expressive style, then the conventional tale should be closer to the explicit poetic end because of its similarity to natural narrative.

It is possible that each culture has a continuum of poetic expressions, many of which are referred to as stories but tailored to suit different occasions and functions and suited for different age groups, yet when researchers make cross-cultural comparisons of stories they merely pick stories from each culture without due regard to the range of possible story types within cultures. These considerations could help explain the conflicting evidence in the literature concerning the universality of the ideal story structure. The American Indian stories which Kintsch (1976) refers to as "stories without schemas" and which pose recall problems for American college students probably represent a more ritualistic expressive style of narrative closer to a literary mode within our culture in contrast to the simple canonical stories which were well recalled by the Vai (Mandler et al. 1978); those are probably closer to an explicit transactional style in most cultures. Research needs to be carried out about the structure of natural narrative within various cultures. Perhaps we will discover that stories with the ideal structure are understood and retrieved universally because their structure mirrors the sequence of natural action narrative which like the episode is based on an

intentional-cause-effect chain. Following this, claims about the universality of the conventional story structure would be plausible as some type of rudimentary episodic schema would be learned by the majority of peoples in childhood.

CONCLUSION

This research study attempted to address the problem of the universality or the cultural specificity of the ideal story structure using the Mandler and Johnson (1977) story grammar as the tool of analysis. The Cree students certainly showed a knowledge of the conventional story structure; their knowledge of the structure of a Cree narrative was less obvious. However, at present it cannot be asserted that this finding points to the universality of the ideal structure or that the Cree are completely acculturated and have lost their traditional schema. Before this issue is resolved research answers need to be found to the questions raised in the previous section. Perhaps we will discover that the conventional structure is indeed universal because it approximates the sequence of natural narrative which patterns our everyday conversations!

REFERENCES

Ablon, J. Relocated American Indians in the San Francisco Bay area: social interaction and Indian identity. Human Organisation, 1964, 23 (4).

Bartlett, F.C. Remembering: a study in experimental and social psychology. Cambridge: Cambridge University Press, 1932.

Britton, J. Language and learning. London: Allen Lane, The Penguin Press, 1970.

Clark, H.H. & Clark, E.V. Psychology and language. New York: Harcourt Brace Jovanovich, Inc., 1977.

Colby, B.N. A partial grammar of Eskimo folktales. American Anthropologist 1973, 75, 655-662.

Cronin, H. An investigation into the ways in which grade six Cree children remember stories. Unpublished Master's Dissertation, The University of Alberta, 1980.

Egoff, S. The republic of childhood. Toronto: Oxford University Press, 1975.

Fagan, W.T. Comparison of the oral language of children, ages nine, ten, eleven. Canada Council Research Grant 576-0563, Department of Elementary Education, University of Alberta, January, 1978.

Furniss, E.R. Schemas for reading and recall of story narrative and descriptive informational texts: a study of sixth grade proficient readers. Unpublished Doctoral Dissertation, University of Alberta, 1978.

Johnson, N.S. & Mandler, J.M. A tale of two structures: underlying and surface forms in stories. Poetics, 1980, 9 (1-3), 51-86.

Kintsch, W. On comprehending stories. Paper presented at the Carnegie Symposium on Cognition, May, 1976.

Kintsch, Walter & Greene, Edith. The role of culture specific schemata in the comprehension and recall of stories. Discourse Processes, 1978, 1, 1-13.

Levi-Strauss, C. The structural study of myth. In T.A. Sebeok (ed.) Myth: a symposium. Bloomington: Indiana U. P., 1955.

Loban, Walter. Language development: kindergarten through grade twelve. Urbana, Illinois: National Council of Teachers of English, 1976.

Mandler, Jean M. A code in the node: the use of story schema in retrieval. Discourse Processes, 1978, 1, 14-35.

Mandler, J.M. Twice told tales: story grammars and schemata. Paper presented at the American Educational Research Association meeting, San Francisco, April, 1979.

Mandler, J.M. & Johnson, N.S. Remberance of things parsed: story structure and recall. Cognitive Psychology, 1977, 9, 111-151.

Mandler, J.M. & De Forrest, M. Is there more than one way to recall a story? Child Development, 1979, 50, 886-889.

Mandler, J.M., Scribner, S., Cole, M., & De Forrest, M. Cross-cultural invariance in story recall. Unpublished manuscript, University of California, San Diego, 1978.

Nelson, K. Cognitive development and the acquisition of concepts. In R.C. Anderson, R.J. Spiro, and W.E. Montague (eds.), Schooling and the Acquisition of Knowledge. Millsdale, N.J.: Erlbaum, 1977.

Pace, Ann Jaffe. The influence of world knowledge on children's comprehension of short narrative passages. Paper presented at the American Educational Association Convention, Toronto, March, 1978.

Piaget, J. The language and thought of the child. London: Routledge and Kegan Paul, 1926.

Preston, R.J. The Cree narrative: expressing the personal meaning of events. Ottawa: National Museum of Canada, 1975.

Propp, Vladimir. Morphology of the folktale. (2nd ed.) Austin: U. of Texas Press, 1958.

Rumelhart, David E. Notes on a schema for stories. In Daniel G. Bobrow and Allan Collins (eds.) Representation and understanding: studies in cognitive science. New York: Academic Press, 1975.

Schank, R.C. & Abelson, R.P. Scripts, plans, goals and understanding. Hillsdale, N.J.: Erlbaum, 1977.

Stein, N.T. How children understand stories: a developmental analysis. Champaign, Illinois: Center for the Study of Reading, University of Illinois, Technical Report 69, March, 1978.

Stein, N.L. & Glenn, C.G. The role of structural variation in children's recall of simple stories. Paper presented at the meeting of the Society for Research in Child Development, New Orleans, 1977.

Stein, N.L. & Nezworski, M.L. The effect of organization and instructional set on memory (Tech. Rep. No. 68). Urbana: University of Illinois, Center for the Study of Reading, January 1978 (a).

Stein, N.L. & Nezworski, M.T. The effect of linguistic markers on children's recall of stories: a developmental study (Tech. Rep. No. 72). Urbana: University of Illinois, Center for the Study of Reading, March, 1978 (b).

The Arbuthnot Anthology of Children's Literature. 4th ed. revised. Glenview, Illinois: Scott, Foreman, 1976.

Thorndyke, P.W. Cognitive structures in comprehension and memory of narrative discourse. Cognitive Psychology, 1977, 9, 77-110.

Van Dikj, T. Action, action description, and narrative. New Literary History, 1975, 6, 275-294.

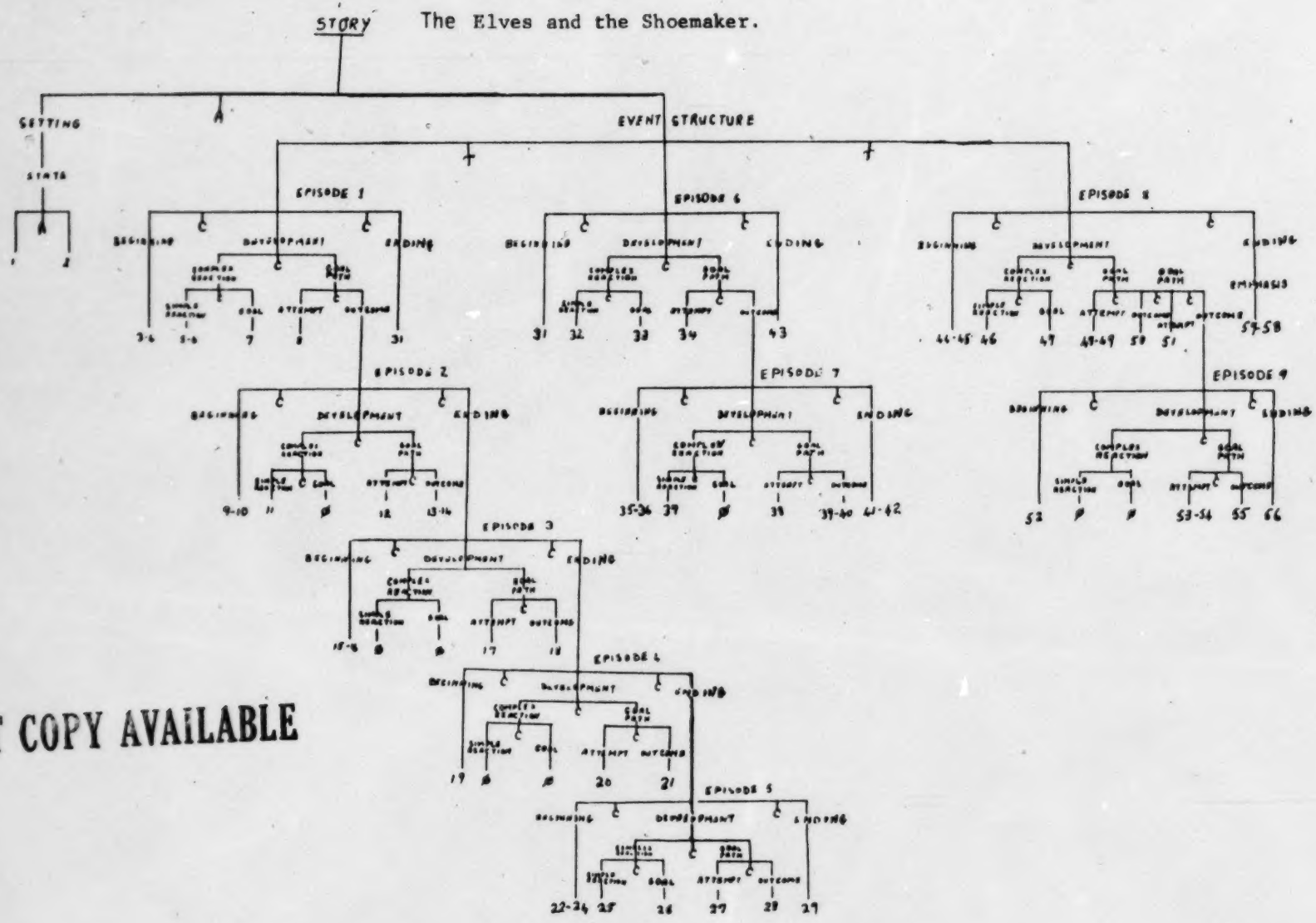

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Figure 1. Tree representation of the fairytale.

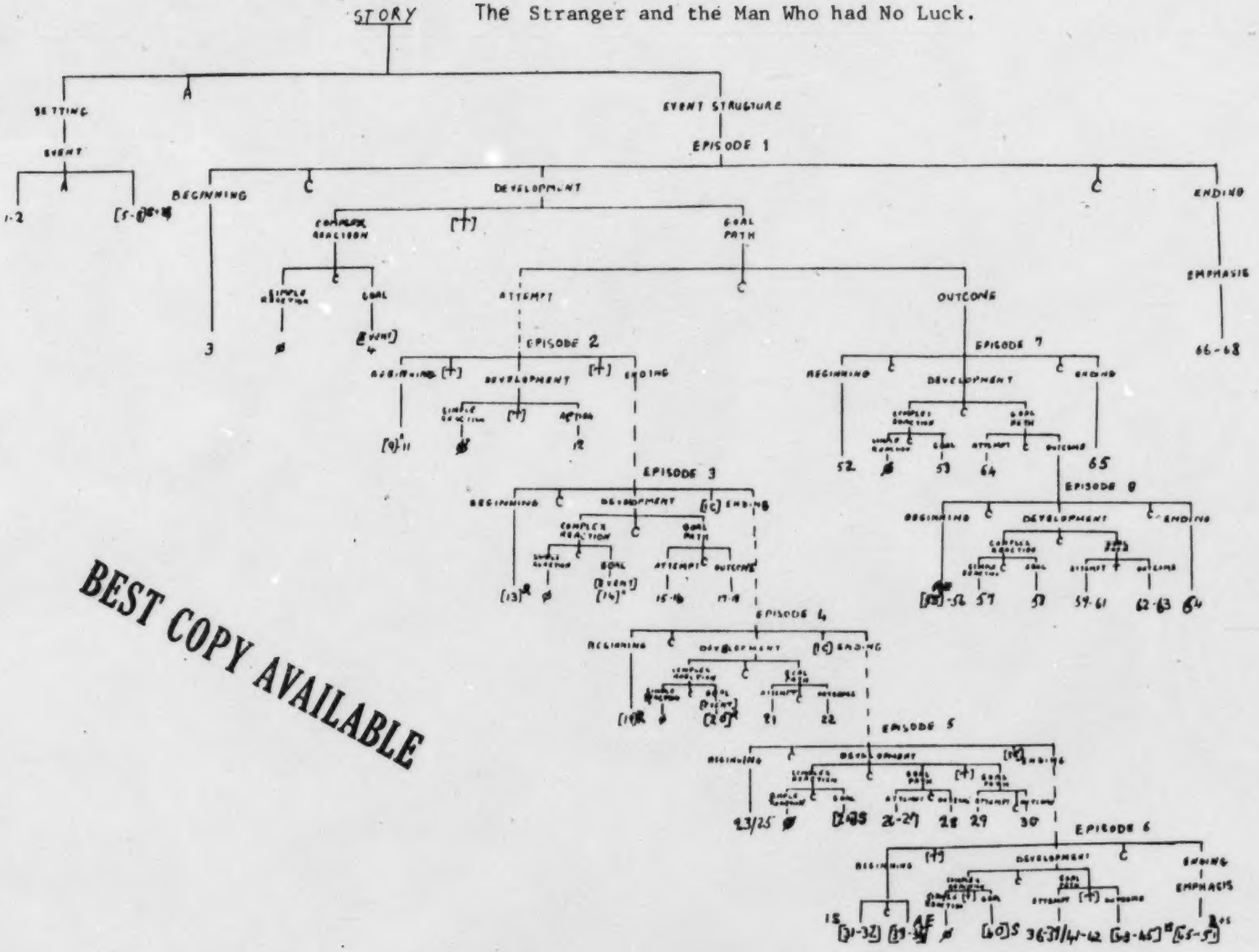

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Figure 2. Tree representation of the Cree Narrative

Table I

Means, Standard Deviations and t-Test Results of Comparisons Between Proportion of Story Propositions Recalled From the Stories

STORY 1 (fairy tale)		STORY 2 (Cree story)		
MEAN	S.D.	MEAN	S.D.	"t"
.323	.094	.245	.071	4.255*

*Significant at the .001 level of confidence = 4.075

Table II

Analysis of Variance for the Difference Between Stories in the Proportion of Recall of Episodes with Different Types of Connections

SOURCE OF VARIATION	SS	DF	MS	F-RATIO
Between People	.5909	15	.0394	
Within People	.7499	80	.0094	
Treatments	.3130	5	.0626	10.7503*
Residual	.4368	75	.0058	
Total	1.3404	95		

*Probability of F = 0.001

Table III

Mean and Standard Deviation of the Proportion of Story Propositions Recalled in Episodes with Different Types of Connections

	STORY 1		STORY 2	
CONNECTION	MEAN	S.D.	MEAN	S.D.
Temporal	.300	.080	.150	.122
Causal	.323	.128	.282	.128
Total Causal (Stated Plus Implied)	-	-	.241	.072

Table IV

Significant Differences Between Stories for the Proportion of Story Propositions Recalled in Episodes with Different Types of Connectives

TEMPORAL 1-2	CAUSAL 1-2	TOTAL CAUSALS: STATED 1 - STATED PLUS IMPLIED 2
.01	N.S.	.01

Table V

Means, Standard Deviations and t-Test Results of Comparisons of Proportion of Inversions of Story Propositions in Recall

STORY 1		STORY 2		"t"
MEAN	S.D.	MEAN	S.D.	N.S.
.043	.043	.051	.072	

Table VI

Means, Standard Deviations and t-Test Results of Comparisons of Proportion of Story Propositions Added in Recall

STORY 1		STORY 2		"t"
MEAN	S.D.	MEAN	S.D.	N.S.
.273	.196	.349	.203	

Table VII

Analysis of Variance for Proportion of Structural and Semantic Distortions in Recall

SOURCE OF VARIATION	SS	DF	MS	F-RATIO
Between People	.1594	15	.0106	
Within People	.2847	48	.0059	
Treatments	.0187	3	.0062	N.S.
Residual	.2660	45	.0059	
Total	.4441	63		

Table VIII

Mean and Standard Deviations of Proportion of Structural and Semantic Distortions in Recall

	STORY 1		STORY 2	
DISTORTIONS	MEAN	S.D.	MEAN	S.D.
Structural	.095	.071	.119	.089
Semantic	.071	.100	.095	.060